Aug. 30, 1960 R. M. SMITH 2,950,497

VACUUM CLEANER NOZZLE CONSTRUCTION

Filed Aug. 8, 1957 3 Sheets-Sheet 1

Fig. 1.

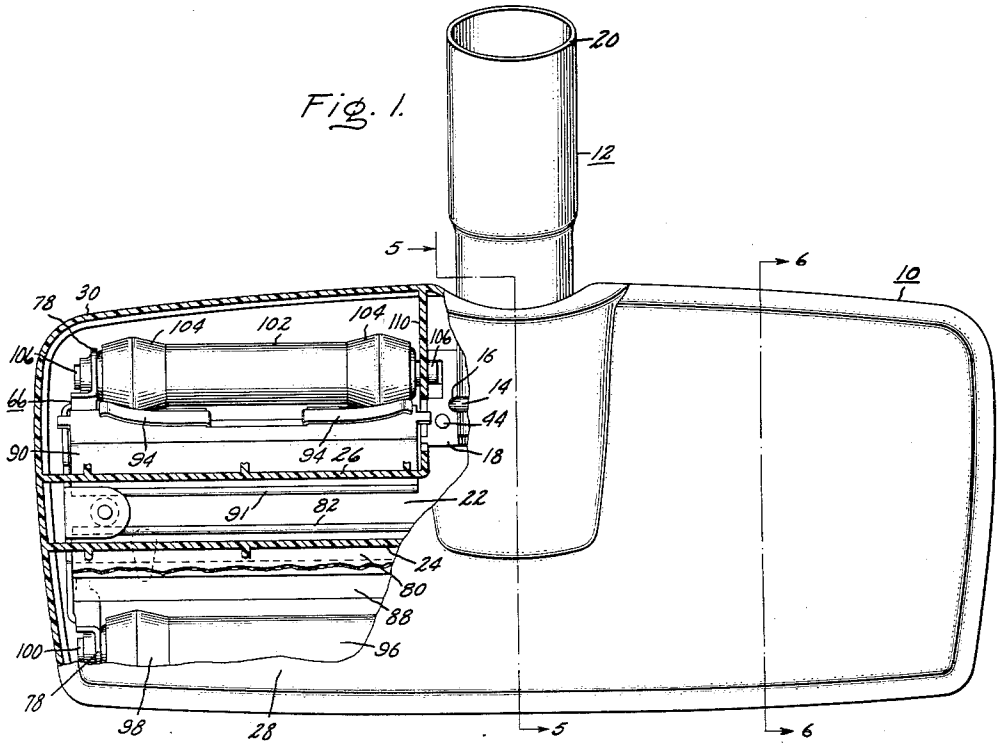
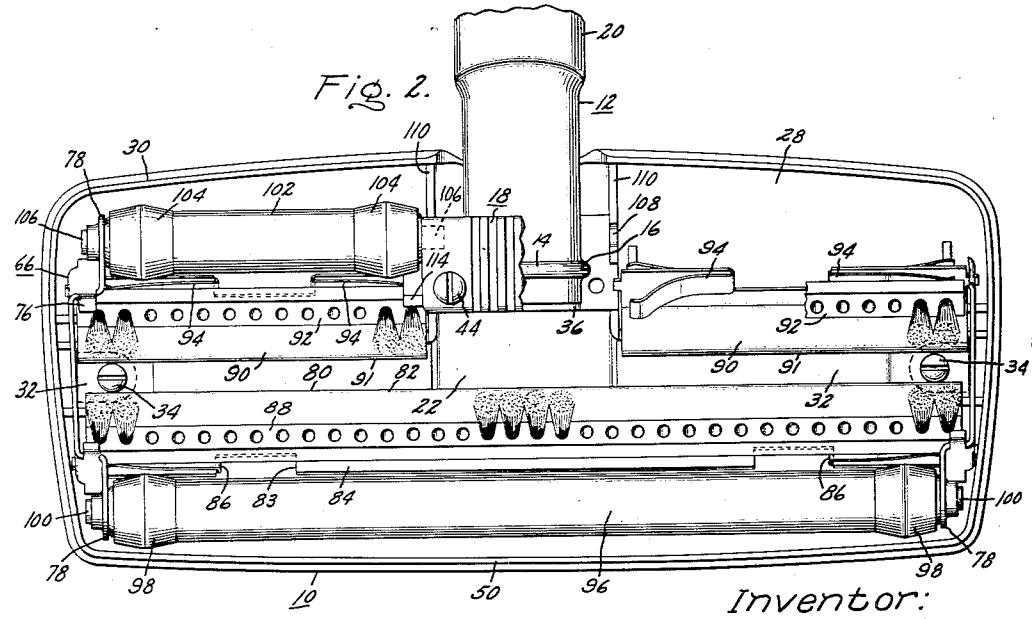


Fig. 2.



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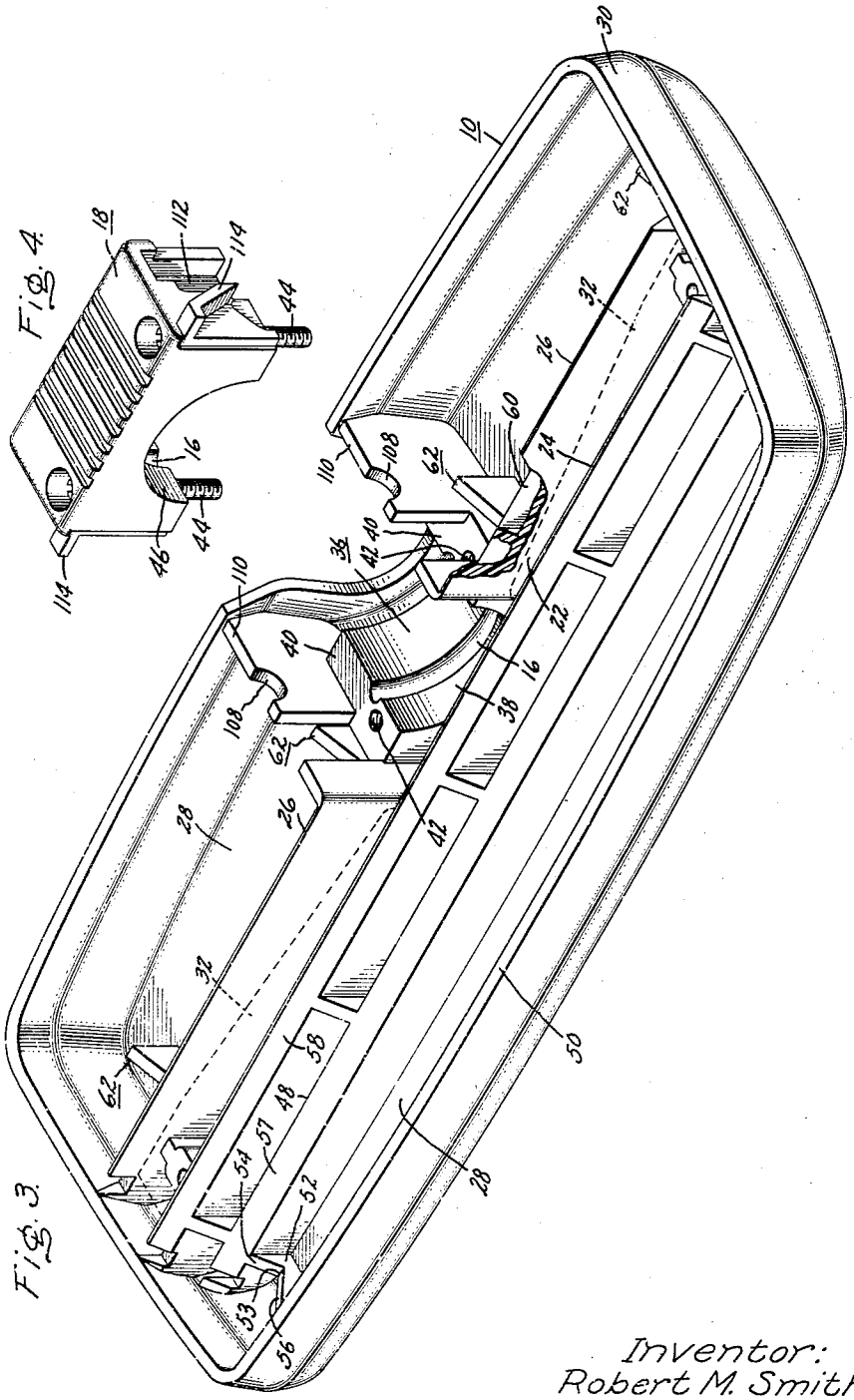


Fig. 3

Fig. 4

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VACUUM CLEANER NOZZLE CONSTRUCTION

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Fig. 5.

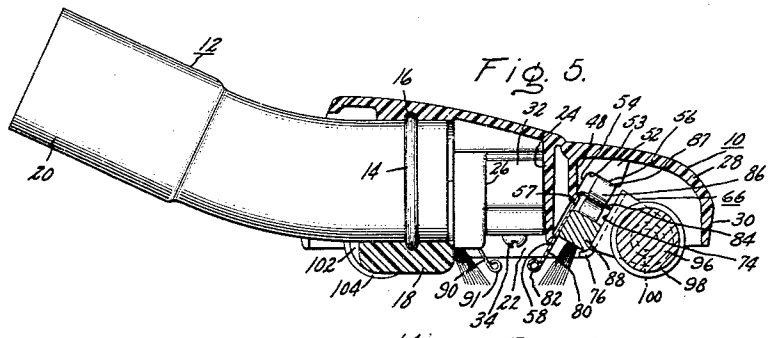


Fig. 6.

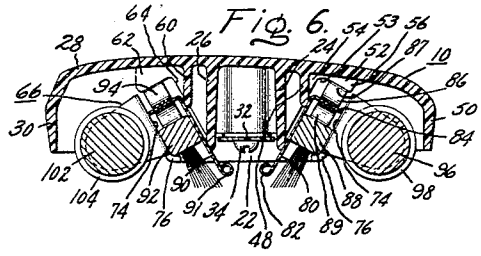


Fig. 7.

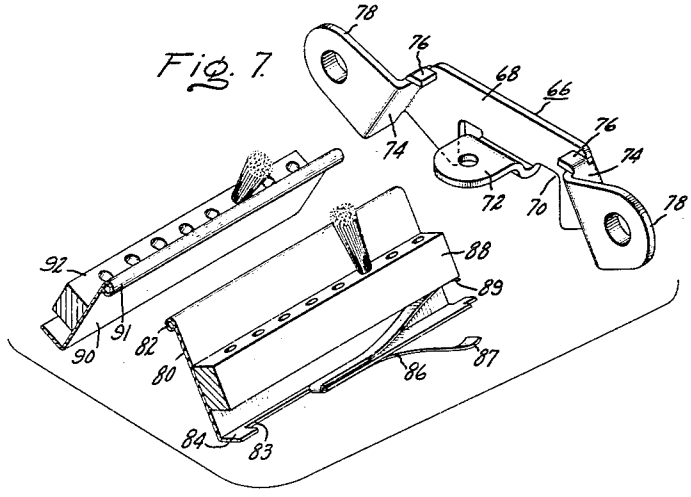


Fig. 8.

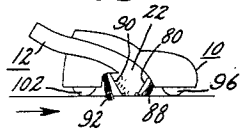
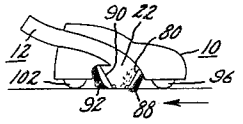


Fig. 9.



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United States Patent Office

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VACUUM CLEANER NOZZLE CONSTRUCTION

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Filed Aug. 8, 1957, Ser. No. 677,005

7 Claims. (Cl. 15—355)

My invention relates generally to vacuum cleaners and particularly to an improvement in the nozzle portions thereof. Although the improved vacuum cleaner nozzle construction contemplated by the instant invention may be incorporated in either the main body of a vacuum cleaner, for example, in a conventional upright type vacuum cleaner, or in a separate detachable vacuum cleaner attachment, for example, one for selective use with a canister type vacuum cleaner, to facilitate an understanding of the invention, it will be disclosed in this patent application as being incorporated in a separate detachable vacuum cleaner attachment. Also, it should be realized that the improved nozzle construction may be utilized to clean rugs, carpets and other equivalent floor coverings, even though it will be disclosed as being incorporated in a vacuum cleaner attachment for principally cleaning rugs.

The vacuum cleaner art is old and highly developed, nevertheless much effort is continuously exerted by those skilled in this art to improve vacuum cleaners and to make them more useful and appealing to the housewife. Although some of this effort is directed toward making vacuum cleaners more versatile, i.e., perform other functions in addition to the basic rug cleaning function, it is believed that the major portion of effort currently is directed toward making vacuum cleaners better able to fulfill their fundamental purpose of cleaning rugs more easily and efficiently, particularly in the case of rug cleaning attachments which are utilized with canister type vacuum cleaners and, hence, do not normally include power driven rug brushes, beaters or the like. The latter goal may be approached either by (1) improving the air moving capacity (suction) of vacuum cleaners, or (2) improving the cleaning ability of the nozzle portion of the vacuum cleaner, i.e., the portion which contacts the rug being cleaned. Although improvement of suction producing mechanism is possible, the instant invention was motivated by a desire to improve nozzle constructions. The principal problem to be surmounted in dealing with nozzle constructions is that of satisfying two somewhat inconsistent requirements, viz., providing (1) efficient cleaning ability and (2) facile handling characteristics (mobility and maneuverability), regardless of the nature of the rug being cleaned and without requiring any manual adjustment on the part of the user other than the normal pushing and pulling action inherently required when using a vacuum cleaner.

It is a principal object of this invention generally to provide an improved vacuum cleaner nozzle construction which cleans rugs efficiently and handles easily, and particularly, one which operates to substantially equalize the forces working on the nozzle construction regardless of the type of rug being cleaned, i.e., rugs falling within a wide range of different pile depths and densities, in order to produce substantially constant cleaning efficiency and handling characteristics without requiring any manual adjustment on the part of the user other than the normal pushing and pulling action incident to using a vacuum cleaner.

It is another object of this invention to provide an improved vacuum cleaner nozzle construction of the foregoing type which may be utilized to clean either rugs or bare floors alone or in sequence without requiring any manual adjustment other than to move the nozzle construction over the rug and/or bare floor.

The principal object of this invention is accomplished in one form by providing in a vacuum cleaner nozzle construction having an elongated nozzle opening which communicates with a source of suction, a set of elongated, floatingly mounted, opposed brushes disposed adjacent to the nozzle opening and angled downwardly and toward each other; a set of elongated, floatingly mounted, nozzle lips that are disposed adjacent to the nozzle opening; and a set of rollers which support the nozzle construction on a floor surface, i.e., rug or bare floor, and establish a horizontal reference plane of operation relative to the floor surface. The relative arrangement of the enumerated elements is such as to allow the brushes to automatically adjust for varying degrees of rug drag white concurrently allowing independent and automatic adjustment of the nozzle lips for the same reason; the over-all effect of the foregoing is to hold the air flow at the nozzle opening and the mechanical forces at the brushes in a substantially constant relationship regardless of the charactteristics of the rug pile being cleaned to the ultimate end of providing an efficient, readily handled nozzle construction.

The above and other objects and further details of that which I believe to be novel and my invention will be clear from the following description and claims taken with the accompanying drawings wherein:

Fig. 1 is a top plan view with portions broken away and shown in section of a combination vacuum cleaner rug and floor tool attachment which incorporates the improved vacuum cleaner nozzle construction contemplated by the instant invention;

Fig. 2 is a bottom plan view thereof with some portions removed and others broken away for the sake of clarity;

Fig. 3 is a perspective view of the interior of the tool housing with the other elements of the tool removed;

Fig. 4 is a perspective view of a retainer which cooperates with the tool housing illustrated in Fig. 3 to assemble the parts of the tool;

Fig. 5 is a sectional view taken substantially on line 5—5 of Fig. 1;

Fig. 6 is a sectional view taken substantially on line 6—6 of Fig. 1;

Fig. 7 is a fragmentary exploded view of several of the elements of the tool;

Fig. 8 is a schematic view illustrating the operation of the tool when it is pushed forwardly, and

Fig. 9 is a schematic view similar to Fig. 8 illustrating the operation when the tool is pulled rearwardly.

By reference to the drawings, an understanding of the construction and operation of a combination rug and floor tool attachment which incorporates the instant invention may be had. The illustrated tool generally comprises an elongated housing **10**, which has its dimension disposed transverse to the line of movement of the tool, and a coupling tube **12**, which is swivelly secured thereto. The coupling tube **12** has an annular bead **14** formed near its inner end, which is received in an annular groove **16** formed partially in the housing **10** and partially in the retainer **18**; the free end **20** of the coupling tube **12** is enlarged and adapted to be detachably connected to a vacuum cleaning hose (not shown), which in turn may be connected to a source of suction.

Referring particularly to Fig. 3, it will be seen that nozzle opening **22** is formed in housing **10** and arranged to communicate with the inner end of the coupling tube **12**. The nozzle opening **22** is in the nature of an elongated recess that extends longitudinally and opens down-

wardly when the tool is placed on a floor surface in cleaning position (see Figs. 5 and 6), and which is formed principally by a forward generally vertical wall 24 and a rear, generally vertical, two-part wall comprised by the spaced, co-planar wall portions 26. The nozzle opening forming walls are secured to the top wall 28 of the housing, and are disposed wholly within the depending peripheral skirt 30 of the housing. Within the nozzle opening 22 are mounted a pair of flat liner inserts 32 which are secured to the housing 10 by screws 34 or equivalent securing means, and function to improve the air flow characteristics of the nozzle opening.

Centrally of the housing 10 and to the rear of the wall portions 26, the housing is broken away and has a socket portion 36 formed therein which includes a semi-circular wall portion 38, in which half of the groove 16 is formed, and on which flat co-planar horizontal wall portions 40 are formed, each of which includes a threaded vertical opening 42. By reference particularly to Figs. 3 and 4, wherein the housing 10 and the retainer 18 are shown, respectively, by themselves, the construction of the socket portion 36 and the retainer 18 will be understood, and an understanding of the manner of assembling the coupling tube to the housing and retainer will be facilitated. To effect this assembly, the inner end of the coupling tube 12 is positioned with respect to the socket portion 36 by having its bead 14 disposed in the portion of groove 16 formed in the socket portion, and then the retainer 18 is secured to the housing 10 by the bolts 44 or equivalent securing means which are received in the threaded openings 42. It will be understood that the other half of the groove 16 which accommodates the bead 14 is located in the inner face of the semi-circular wall 46 which is formed on the retainer 18; wall 46 complements the socket portion 36 to form a detachable arrangement for connecting the coupling tube 12 to the housing 10 in a manner which allows relative swivelling motion between the coupling tube and the housing. As will be subsequently explained, the retainer 18 also performs a retaining function for other elements of the tool to be described.

The housing 10 includes a number of other walls and webs which serve to allow mounting and functioning of the remaining elements of the tool. Forwardly of the wall 24 is formed an elongated vertical wall 48 which is spaced from and generally parallel to the wall 24, and differs therefrom only in that it is narrower, see Figs. 5 and 6. Between the wall 48 and the forward portion 50 of the skirt 30 are formed a pair of webs 52 which extend fore-and-aft of the housing, i.e., with respect to the line of movement of the tool, one adjacent each lateral end of the wall 48. Each web 52 has an upper V-shaped cut-out portion 53 formed by the inclined legs 54 and 56. In Figs. 5 and 6 it will be seen that rearward legs 54 extend rearwardly toward the wall 48 and merge with the free inclined edge 57 formed on the latter, and that wall 24 has a free inclined edge 58 which is disposed in the same general plane as that of the rearward legs 54 of the webs 52, and the free edge 57 of wall 48.

A generally similar construction exists on the rearward side of the rear nozzle wall, with the exception that the rear central portion of the housing 10 is configured, as previously described, to provide the socket portion 36 to accommodate the coupling tube 12. In Fig. 3 it will be seen that to the rear of each wall portion 26 of the rear nozzle wall there is formed a generally parallel, spaced, shorter, wall portion 60. The inner lateral ends of the wall portions 60 terminate at the sides of the socket portion 36. To the rear of each wall portion 60 is formed a pair of spaced, parallel, fore-and-aft webs 62, each of which is generally similar to the webs 52, with the exception that the inboard legs 64, i.e., those nearest the wall portions 60, are inclined in a direction opposite to that of the inboard legs 54 of the webs 52. The free edges of each of the rearward wall portions 26 and 60 are inclined and reside in the same general plane as that of the legs 64, as can best be seen in Fig. 6.

With the foregoing understanding of the construction of the housing 10 per se, it is believed that an understanding of the manner in which the remaining elements are mounted and operate will be facilitated. The principal remaining elements of the tool are a set of rollers, a set of elongated, floatingly mounted nozzle lips, and a set of elongated, floatingly mounted brushes. All of these elements and a number of springs are assembled in the housing by a pair of end brackets 66 and the previously mentioned retainer 18.

The construction of the end brackets 66 can best be seen in Fig. 7 wherein one of them is illustrated. Since both of the end brackets are identical, an understanding of the one illustrated in Fig. 7 will serve for both of them. Bracket 66 may be formed out of a single piece of material, such as sheet metal, and includes the following principal portions: flat main wall portion 68, which when mounted and in position for use will be substantially fore-and-aft and vertically disposed; the central cut-out portion 70 on one side of the wall portion 68; the central apertured tab 72 which is bent in a direction substantially normal to that of the plane of the main wall portion 68; a pair of oppositely inclined wall portions 74, each of which is disposed in a plane which is substantially normal to the plane of the main wall portion 68, and which supports at one side a tab 76 which extends in a direction toward the other tab 76; and a pair of oppositely extending, apertured flanges 78 which are disposed in a generally common plane which is parallel and spaced from the plane of the main wall portion 68.

In order to assemble the remaining elements to the housing 10, the following procedure may be followed. The forward nozzle lip 80, which is in the nature of an elongated flat L-shaped plate having a bead 82 formed along the free edge of its widest wall, and portions 83 cut out of its narrowest wall 84 to facilitate the support of wishbone-shaped leaf springs 86, is mounted forwardly of the walls 48 and 24, but in slidable contact with their inclined free edges, in such a manner that the bead 82 projects away from the interior of the housing. When so mounted, the free end of one of the legs 87 of each of the springs 86 rests on a leg 56 of a web 52. The elongated multi-tufted brush 88 is then placed on the nozzle lip 80 and rests at its ends on the free ends of the other legs 89 of the springs 86, and is in slidable contact with one side of the widest wall of the nozzle lip 80. It will, therefore, be understood that the forward nozzle lip 80 and the forward elongated brush 88 are each slidably mounted on the forward side of the walls 48 and 24.

The rear nozzle lip comprises two elongated nozzle lip portions 90, and the rear brush comprises two elongated brush portions 92; these elements are mounted in a similar manner with respect to the rear wall portions 26 and 60, and webs 62 as their forward counterparts, with the exception that the rear lip portions 90 and the rear elongated brushes 92 are inclined in an opposite direction to that of the forward nozzle lip 80 and the forward brush 88, as can be clearly seen in Figs. 6 and 7. Each of the rear lip portions has a bead 91 on the free edge of its widest wall, and cut-out portions formed in its narrowest wall for receiving a pair of wishbone-shaped, leaf springs 94 which cooperate with the rear lip and brush portions and the rear webs 62 in a generally similar manner as their forward counterparts to resiliently mount these portions. As thus far described, it will be understood that the nozzle lip and lip portions, and the elongated brush and brush portions are resiliently and independently, slidably mounted relative to the housing and each other by the springs 86 and 94, and that they are slidably supported by the free, inclined edges of walls 48 and 58 and wall portions 26 and 60 in such a manner that the lip beads 82 and 91 and bristle tufts of the

brushes project away from the interior of the housing and converge on each other.

In order to retain the nozzle lip and lip portions, and the elongated brush and brush portions, the end brackets 66 are utilized. Assembly may be accomplished by placing the end bracket 66 over the nozzle lip and lip portions, and the elongated brush and brush portions at each lateral end of the housing after these portions have been positioned in the housing as just set forth, and securing the end brackets to the housing, as by utilizing the screws 34 which, as previously mentioned, also secure the liner inserts 32 to the housing. When the end brackets 66 are secured to the housing 10, as can be best seen in Figs. 2, 5 and 6, each of the tabs 76 is disposed adjacent to an end of an elongated brush or brush portion, and the tabs constitute stop means beyond which these brushes and brush portions may not be urged by their mounting springs; it should be noted that the mounting springs are stressed when the end brackets 66 are secured to the housing and constantly bias the nozzle lip and lip portions, and the brush and brush portions to effect the independent floating mounting of each of these elements. The inner adjacent ends of the brush portions 92 are captured by the retainer 18, as will become apparent.

The set of rollers is mounted by the end brackets 66 and the retainer 18. In order to simplify explanation of the manner in which the nozzle lip and lip portions and the elongated brush and brush portions are mounted, the mounting of the rollers has heretofore been omitted. In practice, the rollers may be mounted during the general assembly of these other elements. As can best be seen in Fig. 2, the forward roller 96 is disposed between the elongated brush 88 and the forward portion 50 of the skirt 30, and is rotatably supported in one of the apertures in one of the flanges 78 of each of the end brackets 66. The roller 96 may be made of wood, plastic or the like, and has an annular enlargement 98 near each of its ends, and a stub shaft 100 at each end, which is rotatably received in the referred-to supporting apertures in the flanges 78. If preferred, soft resilient tires could be substituted for the enlargement 98. It will be understood that the stub shafts 100 may be inserted in their supporting apertures in various ways, one way being to mount them in the end brackets 66 prior to securing said brackets to the housing.

In the rear of the brush portions 92 are mounted a pair of rollers 102. Each of the rollers 102 is generally similar to roller 96 except that it is shorter, hence, each has enlarged annular portions 104, or soft resilient tires if preferred, and stub shafts 106. The mounting of the rear rollers 102 differs slightly from the mounting of the forward roller 96, in that, one of the stub shafts 106 of each of the rollers 102 is received in one of the apertures of the other flanges 78 of the end brackets 66, and the other stub shaft 106 of each roller 102 are received in a circular support formed partially in the housing 10 and partially in the retainer 18. This can best be seen in Fig. 3 wherein the semi-circular, cut-out portions 108, which are formed in spaced parallel walls 110 can be clearly seen. On opposite sides of the retainer 18 are formed a pair of grooves 112, only one of which is seen in Fig. 4, which capture the inner opposing stub shafts 106 of the rollers 102 when they are disposed in cut-out portions 108 and the retainer is fully mounted in position relative to the housing.

Although assembling techniques may vary from the foregoing, it is believed clear that one facile technique is to mount the nozzle lip and lip portions and elongated brush and brush portions on the housing 10, and then to secure the end brackets 66, with the forward roller 96 supported thereon, to the housing. The rearward rollers 102 may then be mounted relative to the end brackets 66 and the cut-out portions 108, and then the retainer 18 may be secured in position relative to the housing 10. Securing the retainer 18 to the housing 10, in addition to capturing one of the roller stub shafts of each rearward roller 102 will capture the inner opposing corners of the elongated brush portions 92, by virtue of the oppositely extending, inclined wings 114 which project from the retainer 18. The wings 114 and tabs 76 on the rear side of the end brackets comprise stops for the brush portons 92 in the same manner that tabs 76 on the forward side of the end brackets comprise stops for the brush 88.

When all of the elements of the rug tool are assembled to the housing, the condition of the assembly is as illustrated in Figs. 2, 5 and 6, with the exception that in Fig. 2 one of the rear rollers 102 has been omitted and some of the parts have been broken away for the sake of clarity. It will be noted that when fully assembled, the following conditions obtain: (1) the coupling tube 12 is swivelly connected to housing 10, and (2) each of the nozzle lip and lip portions and brush and brush portions is floatingly mounted, i.e., resiliently mounted for independent movement within certain limits defined by the legs 56 of the webs 52, the inclined edges of walls 24 and 48, the forward walls 74 of the end brackets 66 and the forward tabs 76 in the instance of the forward brush and nozzle lip; and the inclined edges of walls 26 and 60, the webs 62, the rearward walls 74 of the end brackets 66, the rearward tabs 76 and the wings 114, in the instance of the rearward portions.

To utilize the tool, it is placed on the surface to be cleaned, for example, on a rug; the entire tool is supported on the rollers 96 and 102, which serve the functions of permitting the tool to be easily rolled over the rug and also of establishing a horizontal reference plane of operation, in order to maintain a desired seal between the rug and the nozzle lip 80 and lip portions 90. It will, therefore, be understood that the parts are dimensioned and disposed so as to create such a seal when the tool is placed on a rug. Due to the fact that each of the nozzle lip 80 and lip portions 90 is independently, floatingly mounted, they adjust themselves automatically to the type and condition of rug which is being cleaned to thereby automatically maintain a seal regardless of the type of rug being cleaned.

It will also be observed from Figs. 5 and 6 that the free ends of the bristle tufts, which form a part of the elongated brush and brush portions, project beyond the nozzle lip and lip portions and are trimmed in such a manner that their free ends terminate in a generally horizontal plane; therefore, when the tool is placed on a rug and pushed or pulled fore-and-aft, the free ends of some of the bristle tufts (dependent upon the direction of movement) dig into the rug to some extent, however, because the elongated brush and brush portions are each independently, floatingly mounted, they may automatically adjust themselves to the condition and type of rug which is being cleaned in generally the same manner as the nozzle lip and lip portions do. In order to clean the rug, the tool is pushed forwardly (in the direction of the arrow in Fig. 8) and pulled rearwardly toward the user (in the direction of the arrow in Fig. 9) in the normal manner. Regardless of the direction of movement of the tool, that is, forwardly or rearwardly, efficient and easy cleaning results, due to the action of the bristle tufts. When pushing forwardly, the bristle tufts of the rearward elongated brush portion 92 dig into the rug and penetrate the pile to loosen embedded dirt, which is carried up through the tool by the air stream. It will be noted that on forward movement, the bristle tufts of the elongated brush 88 readily yield to any obstructions and allow foreign objects to pass thereunder into the general area of the nozzle opening 22, where such objects will be carried off by the air stream. When pulling the rug tool rearwardly toward the user, the reverse action occurs, in that the bristle tufts of the elongated rug brush 88 dig into the rug and dislodge embedded dirt, and the bristle tufts

of the brush portions **92** yield and allow foreign objects to pass under them.

The over-all arrangement and operation is such that during use the elongated brush and brush portions and the nozzle lip and lip portions automatically adjust themselves for varying degrees of rug drag due to differences in the pile depth, density and condition of the rug, to the desired end of maintaining the air flow at the nozzle opening and the mechanical forces at the bristle tufts in a substantially constant relationship regardless of varying rug characteristics. Concomitantly, in order to establish a reference plane of operation and avoid the creation of too much of a seal between the nozzle lip and lip portions and the rug, in order to prevent the vigorous action of the bristle tufts from interfering with the tool's mobility, and in order to transmit the operating forces of the tool into the floor at points other than at the nozzle lip and lip portions, the tool rolls on the rollers. It will, therefore, be seen that a tool has been provided which automatically adjusts itself to varying types of rugs, and which continuously and automatically adjusts itself to the condition of the rug during the cleaning thereof without requiring any manual adjustment. It will also be observed that in achieving this desirable cleaning efficiency and ease, mobility of the tool has not been sacrificed.

In order generally to facilitate floor cleaning, the vacuum cleaner art has recognized the desirability of providing rug tools which are also capable of cleaning bare floors without requiring any manual adjustment, to the end that the user may clean either or both rugs and bare floors while vacuuming floor surfaces without changing tools or making adjustments. For this purpose, the previously mentioned enlargements **98** and **104** are provided on the rollers. When the tool is utilized to clean a rug, it functions as previously described; when the user desires to roll the tool off of the rug onto a bare floor, the roller enlargements allow the tool to roll over the floor without marring the floor or pushing the dirt on the bare floor away from the nozzle opening. It will be observed that when the tool is rolled on a bare floor, the bristle tufts on the elongated brush and brush portions contact the bare floor, but the nozzle lip and lip portions do not, hence, they do not create a seal therewith, since this is neither necessary nor desirable when cleaning bare floors.

In view of the foregoing, it is believed apparent that applicant's improved nozzle construction satisfies the objects of this invention, principally in that a rug tool has been provided wherein the working forces in the tool are equalized when used on rugs falling within a wide range of rug types and conditions, and the tool produces fairly constant results in cleaning efficiency and in handling characteristics; it should be particularly noted that all of the latter is achieved automatically without requiring any manual adjustment on the part of the user other than the normal pushing and pulling action which is inherent in utilizing a rug tool of this type. Lastly, an important additional operational advantage is provided by the instant nozzle construction in that it is capable of cleaning bare floors without requiring any manual adjustment and, therefore, complete floor surface cleaning may be achieved simply by rolling the tool on and off rugs or bare floors.

As will be evident from the foregoing description, certain aspects of my invention are not limited to the particular details of construction of the example illustrated, and I contemplate that various other modifications and applications will occur to those skilled in the art. It is, therefore, my intention that the appended claims shall cover such modifications and applications as do not depart from the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A vacuum cleaner nozzle construction comprising: an elongated housing; an elongated nozzle opening in said housing; said nozzle opening extending generally longitudinally through said housing and adapted to be juxtaposed to a floor surface to be cleaned, means for connecting said nozzle opening to a source of suction; longitudinally extending floatingly mounted nozzle lips arranged generally parallel to said nozzle opening on both sides thereof; and longitudinally extending elongated brushes arranged generally parallel to said nozzle opening on both sides thereof; said brushes being floatingly mounted and projecting beyond said housing whereby they are adapted to have portions thereof contact a floor surface to be cleaned, said brushes being inclined in such a manner that their floor surface contacting portions converge.

2. A device as defined in claim 1 wherein said nozzle lips are mounted inboard of and inclined similarly to said brushes.

3. A vacuum cleaner nozzle construction comprising: an elongated housing; an elongated nozzle opening in said housing; said nozzle opening extending generally longitudinally through said housing, means for connecting said nozzle opening to a source of suction; longitudinally extending, elongated brushes arranged generally parallel to said nozzle opening on both sides thereof; said brushes being floatingly mounted and projecting beyond said housing whereby they are adapted to have portions thereof contact a floor surface to be cleaned, said brushes being inclined in such a manner that their floor surface contacting portions converge, roller means secured to said housing and adapted to support said nozzle construction on a floor surface to be cleaned; the relative disposition of said brushes and roller means being such that the floor surface contacting portions of said brushes make resilient contact with the floor surface being cleaned when said nozzle construction is supported by said roller means on a floor surface to be cleaned, and longitudinally extending, floatingly mounted nozzle lips arranged generally parallel to said nozzle opening on both sides thereof.

4. A device as defined in claim 3 wherein said nozzle lips are mounted inboard of and inclined similarly to said brushes.

5. A device as defined in claim 3 wherein said brushes and said nozzle lips are floatingly mounted by means including a plurality of wishbone-shaped leaf springs.

6. A device as defined in claim 3 wherein the relative disposition of said nozzle lips to said roller means is such that said nozzle lips contact and form a seal with a resilient floor covering when said nozzle construction is supported thereon, but nozzle lips do not contact a non-resilient floor surface when said nozzle construction is supported thereon.

7. A device as defined in claim 3 wherein said nozzle construction is incorporated in an attachment that is adapted to be selectively connected detachably to a vacuum cleaner hose.

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